

REMARKS

In the Office Action mailed April 14, 2009 the Office noted that claims 1-5, 7-13 and 16-18 were pending and rejected claims 1-5, 7-13 and 16-18. Claims 1, 9, 10 and 17 have been amended, claims 4, 7 and 8 have been canceled, claims 19 and 20 have been added, and, thus, in view of the foregoing claims 1, 2, 5, 9-13, 16-20 and remain pending for reconsideration which is requested. No new matter has been added. The Office's rejections are traversed below.

REJECTIONS under 35 U.S.C. § 102

Claims 1-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Bonadio, U.S. Patent Publication No. 2001/0037053. The Applicant respectfully disagrees and traverses the rejection with an argument and amendment.

Bonadio discusses a device to move tissues apart and protect the edge of the incision. No vascular use is suggested or possible by the Bonadio device for it requires an incision and therefore a direct surgical access. The Bonadio device cannot be used in a percutaneous way.

The Applicant has amended claim 1 to include the features of claims 5, 7 and 8. The Applicants submit that no new matter has been added by the amendment of claim 1.

On page 2 of the Office Action, the Office asserts that Bonadio, Fig. 2, inner sleeve 11(b) discloses "a transverse

compression deformable body (2) applied to the inner wall of the cylindrical element (1)," as in claim 1.

However, the compression corresponds to one specific mechanical stress type in which the forces are exerted in the direction of the thickness of the solicited part. In Bonadio, the inner element 11(b) is a web linked to the element 11(a) and to ring (20) which exerts a traction force according to the direction of the web. Such a web stress is not a compression and is not transverse.

On page 4 of the Office Action with respect to cancelled claim 7, the Office asserts that Figs. 1, 2 and 4, elements 10 and 21; and ¶ 0084 disclose "two end parts, surrounding the cylindrical element (1) and whose relative angular position determines the torsion of said cylindrical element (1), said end parts possessing means of attachment to the wall of a vessel," as in amended claim 1.

However, in Bonadio, the torsion of the outer element and inner element 11(a), 11(b) (which are actually the same element) is produced by the relative position of two rings (20,21) that are at the same side of the device and that are separate from the ring 10 which is at the other side of the device. The angular position of the ring 10 is irrelevant for determining the torsion of the elements 11(a) 11(b).

Further, the end parts of the invention comprise attachment means to the wall of a vessel. In Bonadio, the device

is fastened to the vessel only by co-action of the two end portions (rings 20, 21 and ring 10) applied on opposite sides of the vessel's wall. The attachment is produced by this co-action and no attachment means are present at the end parts.

Further, the attachment means are expandable elements. No such means are disclosed in Bonadio.

In view of the above differences, the invention is not rendered obvious by Bonadio alone or combined with other references.

According to the invention, the device is efficiently delivered and produces an efficient occlusion. In this perspective the deformable body optimizes the occlusion effective with the torsion of the cylindrical element. The stresses are better shared around the cylindrical element and the deformation in torsion leads to a better occlusion by means of the compression of the deformable body.

Modifying Bonadio to provide the device with a body deformable in compression is not obvious. Bonadio merely discloses a pure torsion deformation and does not suggest any other deformation. Further, Bonadio only discloses that elements 11a and 11b are made of the same part so that the mixed deformation of the invention is simply impossible with Bonadio. This incompatible nature of Bonadio reflects that the invention is not derived from this reference.

It is respectfully submit that the deformation of the

element 11b of Bonadio does not cover the deformation is in the instant claims. However, arguendo, even if one of ordinary skill was to accept the interpretation of the Office, claim 1 has further differences that cannot be found in Bonadio.

The device of the invention exhibits two end parts surrounding the cylindrical elements, the end parts having attachment means which are expandable. This involves that each of the end parts can be attached to a vessel. More precisely a first end part can be attached and then the cylindrical element is deformed in torsion before releasing the second end part. In such a way the implantation of the device is much easier than what occurs with the device of Bonadio.

In Bonadio, the ring 10 needs to be put in place through a hole (see figure 3) but is not attached to the periphery of the hole. If the diameter of the ring is too big then the practitioner will not be able to introduce it easily. If the diameter is too small then the ring may not further efficiently applies on the periphery of the hole. And the ring remains movable during all steps of the device delivery whereas it is no more visible for the practitioner and whereas other movements are to be made notably to rotate the rings 20, 21. These rotations can not be made easily and accurately while the ring 10 is not fixed in position.

Further, the length of the device is substantially reduced during the torsion of the element of Bonadio (see figures

3 and 4) so that the practitioner has no guarantee that the inner ring will stay at its original location.

Another drawback of Bonadio is that the elements 11a, 11b are both deformed in torsion since it is the same part of the device. To produce this deformation, a lot of rotation laps are required. And the practitioner needs to act on two rings (rings 20, 21) simultaneously which is not often compatible with the chirurgical context and never comfortable for the practitioner.

As the end parts of the device according to the invention comprise expandable attachment means, a single movement is required for the torsion and is much more practicable. The first end part is fixed in position and only one movement of rotation applied on only one end part is sufficient.

Modifying Bonadio in such an extent would not be possible.

As Bonadio only discloses one web for ha and lib, the ring 10 cannot be provided with expandable attachment means. And attaching the ring 20 of Bonadio would simply be an opposite solution to the one this reference is directed towards: the movement of the ring 20 is necessary in Bonadio. A normally skilled person would not have modified Bonadio in such a way and the applicant even believes it would not have been possible any way.

With reference to the features of claim 8 added into claim 1, Rhodes, U.S. Patent No. 5,843,160 discloses expandable

elements but this teaching is not combinable with Bonadio. In particular, it is required in Bonadio to keep the ring 10 free to enable the movement transmission between the two superimposed parts of the web 11a, 11b. This is a key feature of Bonadio so that one of ordinary skill in the art at the time of the invention would not suppress such a feature. Further, Rhodes is a so different device that a normally skilled person would not have used its teachings with Bonadio.

Further, it is unclear how a seal can be added to the device of Bonadio at the level of the ring 10. Again the ring 10 of Bonadio is intimately associated with the webs 11a, 11b and cannot receive a seal.

For at least the reasons discussed above, claim 1 and the claims dependent therefrom are not anticipated by Bonadio or rendered obvious over the combination of Bonadio and Rhodes.

On pages 2 and 3 of the Office Action, it is asserted that Bonadio discloses "the deformable body (2) is attached to the inner wall of the cylindrical element (1)," as in claim 2.

However, claim 2 states that the deformable body is attached to the inner wall of the cylindrical element. In Bonadio the element 11b is attached to the extremity of the element 11a.

Withdrawal of the rejections is respectfully requested.

REJECTIONS under 35 U.S.C. § 103

Claims 8-10 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bonadio in view of Rhodes, U.S. Patent No. 5,843,160. The Applicants respectfully disagree and traverse the rejection with an argument.

On page 5 of the Office Action, the Office asserts that Bonadio, Fig. 26 disclose "a peripheral obturation web (12) extending from one end of the deformable (2) body (14) and the edge (13) of the expanding element (5, 6)," as in claim 10.

However, the web 210 corresponds to the web 11a in figure 3; it cannot be assimilated to another web such as the peripheral obturation web of claim 10.

Further as discussed above, Rhodes adds nothing to the deficiencies of Bonadio as applied against the independent claim.

Claims 11-13 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bonadio in view of Janzen, U.S. Patent No. 7,008,439. The Applicants respectfully disagree and traverse the rejection with an argument.

Janzen adds nothing to the deficiencies of Bonadio as applied against the independent claim. Therefore, for at least the reasons discussed above, Bonadio and Janzen, taken separately or in combination, fail to render obvious claims 11-13.

For at least the reasons discussed above, Bonadio and Janzen, taken alone in combination, fail to render obvious the features of claims 11-13.

Claims 16-18 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bonadio in view of Dinh, U.S. Patent No. 6,168,619. The Applicants respectfully disagree and traverse the rejection with an argument.

Dinh adds nothing to the deficiencies of Bonadio as applied against the independent claim. Therefore, for at least the reasons discussed above, Bonadio and Dinh, taken separately or in combination, fail to render obvious claims 11-13.

For at least the reasons discussed above, Bonadio and Janzen, taken alone in combination, fail to render obvious the features of claims 11-13.

Withdrawal of the rejections is respectfully requested.

NEW CLAIMS

Claims 19 and 20 are new. Support for the claims may be found, for example, Figs. 4, 6, 8 and 10. The Applicant submits that no new matter is believed to have been added by the inclusion of claims 19 and 20. The prior art of record fails to disclose the deformable body (2) and the cylindrical element (1) are distinct parts; and the deformable body has a thickness greater than the thickness of the cylindrical element.

SUMMARY

It is submitted that the claims satisfy the requirements of 35 U.S.C. §§ 102 and 103. It is also submitted

that claims 1, 2, 5, 9-13, 16-20 continue to be allowable. It is further submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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